REMARKS

Claim 1 has been amended and claims 2 to 6 have been added. Claims 1 to 6 are now active in this application.

The specification has been corrected where necessary. The term "matched filters correlators" has been amended. The terms are fully discussed in the cited reference on page 4, lines 4 and 5. The term "tapped delay" refers to a tapped delay line which is a notoriously old circuit element wherein a delay line can be tapped at intervals along its length. The term "parameters'" is correct since the reference can be to plural parameters. The term "Craner-Rao lower bound" refers to timing error estimation .The term β_I is defined by the equation on page 6. Nothing more is required.

An amended Abstract of the Disclosure is attached hereto.

New Declarations are attached hereto.

With reference to Figure 2, the x and y axes are the vertical line on the left of the drawing and the horizontal line at the bottom of the drawing.

Claim 1 was rejected under 35 U.S.C. 103(a) as being unpatentable over d1r4 in view of Ballot 2 and Mathworld. The rejection is respectfully traversed.

The invention as claimed deals with a preamble having a plurality of separate subpreamble portions of consecutive (non-interleaved symbols. This is expressed by the clause "providing a data packet having a framing format including a preamble split into a plurality of subpreambles of non-interleaved symbols". No such arrangement is taught or suggested by any of the applied references either alone or in the total combination as claimed. Note that d1r4 has an interleaved preamble and nowhere even hints at splitting

the preamble into a plurality of subpreambles. The other cited references in no way overcome this deficiency in d1r4.

Claim 1 further requires the step of, for individual subpreamble and for combined subpreamble options, determining the following parameter:

$$\beta_i = \frac{1}{T_i^2} \int_{t_i}^{t_i+T_i} \left| r(t) \, e^{-j\hat{\phi}_i} \right|^2 dt;$$

where T_i is the preamble or subpreamble duration in each option, t_i is the preamble or subpreamble start time, and $\hat{\phi}_i$ is the estimated phase shift in each option. No such step is taught or suggested either alone or in the combination as claimed in any of the applied references as well as not shown in any proper combination of the applied references.

Claim 1 yet further requires the step of determining synchronization using correlation with a priori known symbols using the subpreamble or combined subpreamble option which provides the lowest β. No such step is taught or suggested either alone or in the combination as claimed in any of the applied references as well as not shown in any proper combination of the applied references.

Claims 2 and 3 depend from claim 1 and therefore define patentably over the applied references for at least the reasons presented above with reference to claim 1.

Claim 2 further limits claim 1 by requiring that the plurality of subpreambles be two, the two subpreambles being separated in time by other symbols. No such step is taught or suggested either alone or in the combination as claimed in any of the applied references as well as not shown in any proper combination of the applied references.

Claim 3 further limits claim 2 by requiring that the other symbols be one of other data signals or a priori known symbols. No such step is taught or suggested either alone or in the combination as claimed in any of the applied references as well as not shown in any proper combination of the applied references.

Claim 4 requires, among other steps, the step of providing a data packet having a framing format including a preamble split into a plurality of subpreambles of non-interleaved symbols. No such step is taught or suggested either alone or in the combination as claimed in any of the applied references as well as not shown in any proper combination of the applied references.

Claim 4 further requires the step of determining whether any of the subpreambles are have been affected by at least one of impulse noise or burst noise. No such step is taught or suggested either alone or in the combination as claimed in any of the applied references as well as not shown in any proper combination of the applied references.

Claim 4 still further requires the step of determining synchronization using the subpreambles of the plurality of subpreambles which have not been affected by the at least one of impulse noise or burst noise. No such step is taught or suggested either alone or in the combination as claimed in any of the applied references as well as not shown in any proper combination of the applied references.

Claims 5 and 6 depend from claim 4 and therefore define patentably over the applied references for at least the reasons stated above with reference to claim 4.

In addition, claim 5 further limits claim 4 by requiring the the plurality of subpreambles be two, the two subpreambles being separated in time by other symbols. No such step is taught or suggested either alone or in the combination as claimed in any of

the applied references as well as not shown in any proper combination of the applied references.

Claim 6 further limits claim 5 by requiring that the other symbols be one of other data signals or a priori known symbols. No such step is taught or suggested either alone or in the combination as claimed in any of the applied references as well as not shown in any proper combination of the applied references.

In view of the above remarks, favorable reconsideration and allowance are respectfully requested.

Respectfully submitted,

Jay M. Cantor
Attorney for Applicant(s)
Reg. No. 19,906

Texas Instruments Incorporated
P. O. Box 655474, MS 3999
Dallas, Texas 75265
(301) 424-0355 (Phone)
(972) 917-5293 (Phone)
(301) 279-0038 (Fax)